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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,753	07/01/2003	Bruce Gregory Warren	895,080-013	5558

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EXAMINER

RUSSELL, WANDA Z

ART UNIT	PAPER NUMBER
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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/612,753	Applicant(s) WARREN ET AL.	
	Examiner Wanda Z. Russell	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ✓ | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) ✓ | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. ____ | 6) <input type="checkbox"/> Other: ____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :5/31/2005,12/07/2006,04/05/2007,05/01/2007.

DETAILED ACTION

Drawings

1. In Fig. 7, at the right side, a letter is missing after "port 2".

Specification

2. The disclosure is objected to because of the following informalities:

In [0381], the first "112" should be "111" based on the description.

All abbreviations need to be spelled out first time they appear.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1 and 2** are rejected under 35 U.S.C. 102(b) as being anticipated by Black et al. (U.S. Patent 6,614,796 B1).

For **claim 1**, Black et al. teach a Fibre Channel Arbitrated Loop (Title) interconnect (col. 1, lines 29-30) system comprising:

a first port (108-Fig. 4, or 124-Fig. 5),

a second port (110-Fig. 4, or 126-Fig. 5),

said first and second ports including port logic to monitor certain arbitrated loop primitives (col. 15, line 4, and col. 14, lines 46-48),

a crossbar switch coupled to said first and second ports (100-Fig. 4),

a route determination apparatus (FCAL switch-Fig. 4, or 136-Fig. 5) including a routing table (127-Fig. 4) consisting of ALPA addresses (FCAL addresses, col. 17, line 59) and their associated ports, the route determination apparatus coupled to each port and the crossbar switch (Fig. 4 or Fig. 5),

whereby the crossbar switch creates paths between the ports based on arbitrated loop primitives (col. 15, lines 2-4).

For **claim 2**, Black et al. teach the interconnect system of claim 1 whereby the arbitrated loop primitives that cause the crossbar switch to create paths between ports includes one or more of the following: ARB, OPN and CLS (col. 2, line 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 3-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. (U.S. Patent 6,614,796 B1), and further in view of Global Engineering ("Fibre Channel Arbitrated Loop" from IDS).

For **claim 3**, Black et al. teach a Fibre Channel arbitrated loop (Title) interconnect (col. 1, line 29-30) system, the interconnect system including:

a first port (124-Fig. 5) containing port logic (col. 8, line 14) coupled to the first Arbitrated Loop (Fig. 4, FCAL is Loop Switch),

a second port (126-Fig. 5) containing port logic (col. 8, line 14) coupled to the second Arbitrated Loop (Fig. 4, FCAL is Loop Switch),

route determination apparatus (FCAL switch-Fig. 4, or 136-Fig. 5) for selecting a route between ports (col. 14, lines 48-52), the said route determination apparatus selecting (col. 15, line 4, and col. 14, lines 46-48) routes based on received Fibre Channel Arbitrated Loop primitives from the ports and including (127-Fig. 4) a routing table containing ALPA addresses (FCAL addresses, col. 17, line 59) and their associated ports (110, 112-Fig. 4),

connectivity apparatus (half bridges, 102-Fig. 4, and col. 14, line 12) coupled to the first and second ports and to the route determination apparatus for switching frames (col. 1, line 20) between ports under control of the route determination apparatus,

the said connectivity apparatus is a crossbar switch (Fig. 4 and 5), whereby Fibre Channel frames (col. 1, line 20) are transferred between a device on the first Arbitrated Loop and the second Arbitrated Loop Device (source and destination, col. 1, lines 20-27).

However, Black et al. fails to specifically teach a system for interconnecting Fibre channel Arbitrated Loop devices comprising: a first Arbitrated Loop containing one or more Fibre Channel arbitrated loop devices, and a second Arbitrated Loop Device.

Global Engineering teaches

a system (Fig. J.1, P. 122) for interconnecting Fibre channel Arbitrated Loop devices (Fig. J.1, P. 122) comprising:

a first Arbitrated Loop containing one or more Fibre Channel arbitrated loop devices (right side of Fig. J.1, P. 122),

a second Arbitrated Loop Device (Fabric Element-Fig. J.1, P. 122),

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Black et al.] with [Global Engineering] to obtain the invention as specified in claim 3 for supporting more users for the system.

For **claim 4**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 3). In addition, Black et al. teach the interconnect system of claim 3 whereby the arbitrated loop primitives that cause the crossbar switch to create paths between ports includes one or more of the following: ARB, OPN and CLS (col. 2, line 2).

For **claim 5**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 3). In addition, Black et al. teach the interconnect system of claim 3 including a R_RDY (col. 1, line 26) counter to count R_RDY's before the OPN response is received by the originating Fibre Channel Arbitrated Loop Device that is connected to the interconnect system (col. 1, lines 24-26).

For **claim 6**, Black et al. teach

a first and second Fibre Channel Arbitrated Loop Switches including port logic (col. 8, line 14), connectivity apparatus (102, 104, 106-Fig. 4) and route determination logic (127-Fig. 4),

the route determination logic creating routes based on the receipt of certain arbitrated Loop primitives (col. 15, lines 2-4),

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whereby Said first and second loop switches are interconnected by two or more Fibre Channel Arbitrated Loop links (col. 2, line 60) and transfer frames on both ports (col. 1, line 20).

However, Black et al. fail to specifically teach a system for interconnecting Fibre channel Arbitrated Loop devices comprising: a first Arbitrated Loop containing one or more Fibre Channel arbitrated loop devices, and a second Arbitrated Loop Device.

Global Engineering teaches a system (Fig. J.1, P. 122) for interconnecting Fibre channel Arbitrated Loop devices (Fig. J.1, P. 122) comprising:

- a first Fibre Channel Arbitrated loop switch (X-Fig. Q. 1, P. 132),

- a second Fibre Channel Arbitrated loop switch (Y-Fig. Q. 1, P. 132),

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Black et al.] with [Global Engineering] to obtain the invention as specified in claim 6 for supporting more users for the system.

For **claim 7**, Black et al. teach a system comprising:

- a plurality of Fibre Channel Arbitrated Loop ports (108, 110-Fig. 4) each including port logic (col. 8, line 14),

- a route determination apparatus (FCAL switch-Fig. 4, or 136-Fig. 5),

- a crossbar switch (100-Fig. 4) adapted to connect the Fibre Channel Arbitrated Loop ports based on the receipt of certain Fibre Channel Arbitrated Loop primitives (col. 15, line 4, and col. 14, lines 46-48), whereby a LIP received on said first port is selectively propagated to one or more of the ports (col. 42, lines 14-18).

However, Black et al. fail to specifically teach a system for interconnecting Fibre channel Arbitrated Loop devices.

Global Engineering teaches a system (Fig. J.1, P. 122) for interconnecting Fibre channel Arbitrated Loop devices (Fig. J.1, P. 122).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Black et al.] with [Global Engineering] to obtain the invention as specified in claim 7 for supporting more users for the system.

For **claim 8**, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices comprising:

- a plurality of Fibre Channel Arbitrated Loop ports (108, 110-Fig. 4) each including port logic (col. 8, line 14),
- a route determination apparatus (FCAL switch-Fig. 4, or 136-Fig. 5),
- a connectivity apparatus (half bridges, 102-Fig. 4, and col. 14, line 12), and
- logic (col. 8, line 14) implementing predefined loop control criteria to enforce fairness (col. 8, lines 14-18).

However, Black et al. fail to specifically teach a system for interconnecting Fibre channel Arbitrated Loop devices.

Global Engineering teaches a system (Fig. J.1, P. 122) for interconnecting Fibre channel Arbitrated Loop devices (Fig. J.1, P. 122).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine [Black et al.] with [Global Engineering] to obtain the invention as specified in claim 8 for supporting more users for the system.

For **claim 9**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 8). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 8, wherein the fairness logic serves to limit the number of times a connected device opens another device (col. 1, line 32, and 29-32).

For **claim 10**, Black et al. and Global Engineering et al. teach everything claimed as applied above (see claim 8 and 9). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 9, wherein the fairness logic serves to limit the number of times a connected device sequentially opens another device (col. 35, lines 21-24).

For **claim 11**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 8). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 8, further including a counter to count the number of opens (col. 44, line 33).

For **claim 12**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 8 and 11). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 11, wherein the counter counts sequential opens (col. 44, lines 45-48).

For **claim 13**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 8). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 8, wherein the logic proactively closes a device (col. 23, line 16).

For **claim 14**, Black et al. and Global Engineering teach everything claimed as applied above (see claim 8). In addition, Black et al. teach a system for interconnecting Fibre Channel Arbitrated Loop Devices of claim 8, wherein the ports are assigned different access priorities (col. 7, line 37).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wanda Z. Russell whose telephone number is (571) 270-1796. The examiner can normally be reached on Monday-Thursday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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